

(IWM – 3) Soils Data Interpretation Table for IWM Planning

Soil Texture	% Sand	% Silt	% Clay	CEC Range (meq/100g)	Bulk Density (g/cm ³)	Soil weight (Million lbs. per ac-ft)	Soil Solids		Unavail-able Water		Available Water		Soil Porosity at FC	
							% Vol.	in/ft	% Vol.	in/ft	% Vol.	in/ft	% Vol.	in/ft
Sands	86 - 98	2 - 14	2 - 8	2 – 6	1.65	4.48	62.3	7.47	2.5	0.3	4.17	0.5	31.1	3.73
Loamy Sands	72 - 88	2 - 28	2 - 14		1.6	4.35	60.4	7.25	7.0	0.84	8.33	1.0	24.3	2.91
Fine Sands	86 - 98	2 - 14	2 - 8		1.65	4.48	61.5	7.38	10.2	1.22	10.4	1.25	17.9	2.15
V. F. Sands	86 - 98	2 - 14	2 - 8		1.65	4.48								
Loamy F. Sands	72 - 88	2 - 28	2 - 14		1.6	4.35								
Loamy V. F. Sands	72 - 88	2 - 28	2 - 14		1.6	4.35								
Sandy Loam	46 - 84	2 - 48	2- 18	3 – 8	1.56	4.24	58.8	7.06	12.3	1.48	12.5	1.5	16.3	1.96
Fine Sandy Loam	46 - 84	2 - 48	2 - 18		1.56	4.24								
V. F. Sandy Loam	46 - 84	2 - 48	2 - 18	7 – 15	1.53	4.16	55.4	6.65	16.2	1.94	16.7	2.0	11.8	1.41
Loam	26 - 50	30 - 48	10 - 26		1.42	3.86								
Silt Loam	2 - 48	52 - 78	2 - 26	10 – 19	1.46	3.97								
Silt	2 - 18	82 - 98	2 - 10		1.47	3.99								
Sandy Clay Loam	46 - 78	2 - 26	22 - 36	15 - 30	1.4	3.8	50.2	6.02	20.0	2.4	18.3	2.2	11.5	1.38
Silty Clay Loam	2 - 18	42 - 70	28 - 38		1.27	3.45								
Clay Loam	22- 44	18 - 50	28 - 38		1.32	3.59								
Sandy Clay	46 - 62	2 - 16	38 - 54		15 - 30	1.33	3.61	47.9	5.75	21.5	2.58	16.7	2.0	13.9
Silty Clay	2 - 18	42 - 58	42 - 58	1.23		3.34								
Clay	2 - 44	2 - 38	42 - 98	1.25		3.4								
<ul style="list-style-type: none">• V = Very & F = Fine• Particle diameter (mm) for Sand, Silt & Clay: Very Coarse Sand (2.0 - 1.0), Coarse Sand (1.0 - 0.5), Med. Sand (0.5 - 0.25), Fine Sand (0.25 - 0.1), Very Fine Sand (0.1 - 0.05), Silt (0.05 - 0.002) and Clay (< 0.002)• Cation Exchange Capacity (CEC) taken from the Western Fertilizer Handbook, 2nd ED., 1995						<ul style="list-style-type: none">• Bulk Density (Ref. bulk density calculator @ Pedosphere.com)• Unavailable Water (Ref. Figure 1-9 of the National Engineering Handbook; Section 15 – Irrigation)• Available Water (Ref. NRCS Salinity Management for Soil & Water; Table 5.1, page 5.10)• FC = Field Capacity.								
NOTE: <u>Soil structure</u> is evaluated for its effect on downward movement of water: Single grain (rapid), Granular (rapid), Blocky (moderate), Prismatic (moderate), Platy (slow) and Massive (slow). The <u>Soil Intake Family</u> (typically 0.1 thru 2.0) is used in IWM field evaluations and irrigation system design. <u>Irrigation Water Quality</u> (i.e., Electrical Conductivity of irrigation water (ECiw) in dS/m & Sodium Adsorption Ratio (SAR)) is evaluated for its potential detrimental effects on plant moisture availability and water infiltration. <div>rudy garcia 2008</div>														

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